

Title (en)
IDENTIFICATION OF SORTASE GENE

Title (de)
IDENTIFIZIERUNG DES SORTASE-GENS

Title (fr)
IDENTIFICATION DU GENE DE LA SORTASE

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Abstract (en)
[origin: WO03020885A2] The present invention is a substantially purified sortase-transamidase enzyme from Gram-positive bacteria, such as Staphylococcus aureus. The enzyme having a molecular weight of about 23,539 or about 29,076 daltons and catalyzing a reaction that covalently cross-links the carboxyl terminus of a protein having a sorting signal to the peptidoglycan of a Gram-positive bacterium, the sorting signal having: (1) a motif of LPX3X4G or NPQ/KTN/G therein; (2) a substantially hydrophobic domain of at least 31 amino acids carboxyl to the motif; and (3) a charged tail region with at least two positively charged residues carboxyl to the substantially hydrophobic domain, at least one of the two positively charged residues being arginine, the two positively charged residues being located at residues 31-33 from the motif, wherein X3 is any of the twenty naturally-occurring L-amino acids, and X4 is alanine, serine, or threonine. Variants of the enzyme, methods for cloning the gene encoding the enzyme and expressing the cloned gene, and methods of use of the enzyme, including for screening for antibiotics and for display of proteins or peptides on the surfaces of Gram-positive bacteria, are also disclosed.

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